AMENDMENTS TO THE CLAIMS

1.   (Canceled)

2.   (Currently Amended) The method recited in claim ~~1~~52, wherein the one or more states are specified based on thresholds.

3.   (Currently Amended) The method recited in claim ~~1~~52, wherein the notification is an event.

4.   (Currently Amended) The method recited in claim ~~1~~52, wherein the particular component or interaction between the particular two or more components is a component, and wherein the step of generating the notification comprises generating the notification by the component.

5.   (Currently Amended) The method recited in claim ~~1~~52, wherein the particular component or interaction between the particular two or more components is an interaction between the particular two or more components, and wherein the notification is generated by at least one of the particular two or more components.

6.   (Currently Amended) The method recited in claim ~~1~~52, further comprising the step of:

        reporting the notification to a network management system.

7.   (Canceled)

8.   (Currently Amended) The method recited in claim ~~7~~52, wherein, the step of detecting is performed by an agent, said agent being different than the particular component.

9.   (Canceled)

10.   (Currently Amended) The method recited in claim ~~1~~52, ~~further~~ wherein monitoring the condition associated with the particular component or interaction between the two or more particular components ~~comprising~~ comprises the step of~~:~~

polling a value for an Management Information Base object at the particular
          component or the particular two or more components ~~to determine that the~~
          ~~particular state or state transition has occurred~~;
wherein querying the state table is based at least upon the value for the Management
          Information Base object.

11–14. (Canceled)

15.   (Currently Amended) The method recited in claim ~~48~~52, wherein the set of one or more illegal states or state transitions comprises a state associated with an authorization violation or an authentication forgery .

16.   (Currently Amended) The method recited in claim ~~48~~52, wherein the set of one or more undesirable states or state transitions comprises a state associated with a sudden quality of service degradation or a violation of a service level agreement.

17.   (Currently Amended) The method recited in claim ~~1~~52, further comprising the step of examining multiple notifications to deduce one or more trends regarding the network.

18.   (Previously presented) The method recited in claim 17, wherein the step of examining multiple notifications comprises examining notifications for stable-behavior in a threshold value for a particular trend.

19.   (Previously presented) The method recited in claim 17, wherein the step of examining multiple notifications comprises examining notifications for increases or decreases in a threshold value for a particular trend.

20.   (Currently Amended) A computer-based system for capturing behavior for network components and for interactions between components, the system comprising:

one or more network components, each network component configured to

 spontaneously generate notifications when specified states and state

 transitions occur involving the network component,

  wherein the specified state and state transitions include one or more composite

   state transitions, each of said composite state transition comprising

   multiple state transitions; and

a network management system configured to receive said spontaneously generated

 notifications;

wherein each network component is further configured to:

 access first data that defines the specified states and state transitions involving

  the network component,

   wherein the first data defines at least one composite state transition,

    each of said composite state transition comprising multiple

    state transitions;

 access second data that indicates, for the network component or an interaction

  between the network component and another network component, a set

  of one or more undesirable states or state transitions;

   wherein each of said one or more undesirable states or state transitions

    is a state or state transition of the specified states and state

    transitions that is associated with undesirable behavior; and

 access third data that indicates, for the network component or the interaction,

  a set of one or more illegal states or state transitions;

   wherein each of said one or more illegal states or state transitions is a

    state or state transition of the specified states and state

    transitions that is associated with illegal behavior;

   wherein the set of one or more illegal states or state transitions is

    different from the set of one or more undesirable states or state

    transitions;

 detect that a particular state or state transition has occurred at the network

  component or the interaction, wherein the step of detecting comprises:

> monitoring a condition associated with the network component or the
> interaction;
>
> querying a state table storing said first data to determine the particular
> state or state transition for the network component or the
> interaction;
>
> determining, based on the second data and third data, that the
> particular state or state transition belongs to either the set of
> one or more undesirable states or state transitions or the set of
> one or more illegal states or state transitions;
>
> in response to detecting that the particular state or state transition has occurred
> at the network component or interaction has entered, generating a
> notification corresponding to the particular state or state transition,
> wherein the particular state or state transition is one of the one or more
> states and state transitions;
>
> wherein the particular state or state transition belongs to either the set
> of one or more undesirable states or state transitions or the set
> of one or more illegal states or state transitions.

21.   (Original) The system of claim 20, further comprising:

> an agent configured to detect the generation of notifications by the network
> components, and configured to report detected notifications to said network
> management system.

22.   (Canceled)

23.   (Currently Amended) The system of claim 2220, wherein the state table is in a the
network management system.

24.   (Currently Amended) The system of claim 2220, wherein the state table is in one of
the one or more network components.

25.   (Canceled)

26.   (Canceled)

27.   (Currently Amended) A computer-based system for capturing illegal and ~~undesired~~ undesirable behavior for network components and for interactions between components comprising:

> one or more network components;
>
> an agent configured to examine said network components to determine whether
>> specified states or state transitions, including composite state transitions, have occurred,
>> wherein the agent is configured to generate notifications upon a determination that a specified state or state transition has occurred;
>> wherein the agent is configured to report detected notifications to a network management system;
>> ~~wherein each of said composite state transition comprises multiple state transitions;~~
>> ~~wherein the specified states and state transitions comprise (1) a set of undesirable states or state transitions associated with undesirable behavior and (2) a set of illegal states or state transitions associated with illegal behavior, said set of illegal states and state transitions being different than said set of undesirable states or state transitions;~~
>> ~~and~~
>
> said network management system configured to receive reports of said generated notifications;
>
> wherein the agent is further configured to:
>> access first data that defines the specified states and state transitions involving a network component,
>>> wherein the first data defines at least one composite state transition,
>>>> each of said composite state transition comprising multiple state transitions;

access second data that indicates, for the network component or an interaction
between the network component and another network component, a set
of one or more undesirable states or state transitions;
wherein each of said one or more undesirable states or state transitions
is a state or state transition of the specified states and state
transitions that is associated with undesirable behavior; and
access third data that indicates, for the network component or the interaction,
a set of one or more illegal states or state transitions;
wherein each of said one or more illegal states or state transitions is a
state or state transition of the specified states and state
transitions that is associated with illegal behavior;
wherein the set of one or more illegal states or state transitions is
different from the set of one or more undesirable states or state
transitions;
detect that a particular state or state transition has occurred at the network
component or the interaction, wherein the step of detecting comprises:
monitoring a condition associated with the network component or the
interaction;
querying a state table storing said first data to determine the particular
state or state transition for the network component or the
interaction;
determining, based on the second data and third data, that the
particular state or state transition belongs to either the set of
one or more undesirable states or state transitions or the set of
one or more illegal states or state transitions;
in response to detecting that particular state or state transition has occurred at
the network component or the interaction, generating one of said
notifications, the one of said notifications corresponding to the
particular state or state transition,

wherein the particular state or state transition is one of the specified
states and state transitions;
wherein the particular state or state transition belongs to either the set
of one or more undesirable states or state transitions or the set
of one or more illegal states or state transitions.

28.   (Canceled)

29.   (Canceled)

30.   (Currently Amended) The computer-readable storage medium as recited in Claim
~~29~~57, wherein the one or more states are specified based on thresholds.

31.   (Currently Amended) The computer-readable storage medium as recited in Claim
~~29~~57, wherein said notifications are events.

32.   (Currently Amended) The computer-readable storage medium as recited in Claim
~~29~~57, wherein the particular component or interaction between the particular two or more
components is a component, and wherein the step of generating the notification comprises
generating the notification by the component.

33.   (Currently Amended) The computer-readable storage medium as recited in Claim
~~29~~57, wherein the particular component or interaction between the particular two or more
components is an interaction between the particular two or more components, and wherein
the notification is generated by at least one of the particular two or more components.

34.   (Currently Amended) The computer-readable storage medium as recited in Claim
~~29~~57, wherein the one or more sequences of instructions ~~for carrying out the step of creating
and storing first information further comprise instructions for carrying~~, when executed by
one or more processors, further cause the one or more processors to carry out the step of:
reporting the notification to a network management system.

35.   (Canceled)

36.   (Currently Amended) The computer-readable storage medium as recited in Claim 35~~35~~<u>57</u>, wherein the step of detecting is performed by an agent, said agent being different than the particular component.

37.   (Canceled)

38.   (Currently Amended) The computer-readable storage medium as recited in Claim ~~29~~<u>57</u>, wherein the <u>one or more sequences of</u> instructions ~~for carrying out the step of creating and storing first information further comprise instructions for carrying~~, <u>when executed by one or more processors, further cause the one or more processors to carry</u> out the step of:

        polling <u>a value for an Management Information Base object at</u> the particular

                component or the particular two or more components ~~to determine that the particular state or state transition has occurred~~

        <u>wherein querying the state table is based at least upon the value for the Management Information Base object.</u>

39–42. (Canceled)

43.   (Currently Amended) The computer-readable storage medium as recited in Claim ~~54~~<u>57</u>, wherein the set of one or more illegal states or state transitions comprises a state associated with an authorization violation or an authentication forgery .

44.   (Currently Amended) The computer-readable storage medium as recited in Claim ~~54~~<u>57</u>, wherein the set of one or more undesirable states or state transitions comprises a state associated with a sudden quality of service degradation or a violation of a service level agreement.

45.   (Currently Amended) The computer-readable storage medium as recited in Claim ~~29~~<u>57</u>, wherein the <u>one or more sequences of</u> instructions ~~for carrying out the step of creating and storing first information further comprise instructions for carrying~~, <u>when executed by one or more processors, further cause the one or more processors to carry</u> out the step of examining multiple notifications to deduce one or more trends regarding the network.

46.   (Previously presented) The computer-readable storage medium as recited in Claim 45, wherein the step of examining multiple notifications comprises examining notifications for stable-behavior in a threshold value for a particular trend.

47.   (Previously presented) The computer-readable storage medium as recited in Claim 45, wherein the step of examining multiple notifications comprises examining notifications for increases or decreases in a threshold value for a particular trend.

48.   (Canceled)

49.   (Canceled)

50.   (Currently Amended) The method recited in claim ~~1~~52, wherein the first data is stored in a state table in a network management system, wherein the step of generating is performed by a component or agent separate from the network management system.

51.   (Currently Amended) The method recited in claim ~~1~~52, wherein the first data is stored in a state table in the particular component or in at least one of the two or more particular components.

52.   (Currently Amended) <u>A method for capturing behavior for network components and for interactions between components comprising:</u>

        <u>accessing first data that defines one or more states and state transitions for a particular component or interaction between a particular two or more components, wherein the first data defines at least one composite state transition, each of said composite state transition comprising multiple state transitions;</u>

        <u>accessing second data that indicates, for the particular component or interaction between the particular two or more components, a set of one or more undesirable states or state transitions;</u>

        <u>wherein each of said one or more undesirable states or state transitions is a state or state transition of the one or more states and state transitions that is associated with undesirable behavior;</u>

accessing third data that indicates, for the particular component or interaction

between the particular two or more components, a set of one or more illegal

states or state transitions;

wherein each of said one or more illegal states or state transitions is a state or

state transition of the one or more states and state transitions that is

associated with illegal behavior;

wherein the set of one or more illegal states or state transitions is different

from the set of one or more undesirable states or state transitions; and

in response to the particular component or interaction between the particular two or

more components entering a particular state or state transition, generating a

notification corresponding to the particular state or state transition,

wherein the particular state or state transition is one of the one or more states

and state transitions;

wherein the particular state or state transition belongs to either the set of one

or more undesirable states or state transitions or the set of one or more

illegal states or state transitions;

~~The~~ the method ~~recited in claim 48,~~ further comprising:

detecting that the particular component or interaction between the particular

two or more components has entered the particular state or state

transition;

wherein said notification is generated in response to said step of detecting;

wherein the step of detecting comprises:

monitoring a condition associated with the particular component or

interaction between the two or more particular components;

querying a state table storing said first data to determine a state for the

particular component or interaction between the two or more particular

components;

determining, based on the second data and third data, that the determined state

belongs to either the set of one or more undesirable states or state

transitions or the set of one or more illegal states or state transitions.

53.   (Canceled)

54.   (Canceled)

55.   (Currently Amended) The computer-readable storage medium as recited in claim 2957, wherein the first data is stored in a state table in a network management system, wherein the step of generating is performed by a component or agent separate from the network management system.

56.   (Currently Amended) The computer-readable storage medium as recited in claim 2957, wherein the first data is stored in a state table in the particular component or in at least one of the two or more particular components.

57.   (Currently Amended) A computer-readable storage medium carrying one or more sequences of instructions for capturing behavior for network components and for interactions between components, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:

accessing first data that defines one or more states and state transitions for a particular component or interaction between a particular two or more components, wherein the first data defines at least one composite state transition, each of said composite state transition comprising multiple state transitions;

accessing second data that indicates, for the particular component or interaction between the particular two or more components, a set of one or more undesirable states or state transitions;

wherein each of said one or more undesirable states or state transitions is a state or state transition of the one or more states and state transitions that is associated with undesirable behavior;

accessing third data that indicates, for the particular component or interaction between the particular two or more components, a set of one or more illegal states or state transitions;

wherein each of said one or more illegal states or state transitions is a state or

state transition of the one or more states and state transitions that is

associated with illegal behavior;

wherein the set of one or more illegal states or state transitions is different

from the set of one or more undesirable states or state transitions; and

in response to the particular component or interaction between the particular two or

more components entering a particular state or state transition, generating a

notification corresponding to the particular state or state transition,

wherein the particular state or state transition is one of the one or more states

and state transitions;

wherein the particular state or state transition belongs to either the set of one

or more undesirable states or state transitions or the set of one or more

illegal states or state transitions;

~~The computer-readable storage medium as recited in claim 54,~~ wherein the one or

more sequences of instructions ~~for carrying out the step of creating and storing~~

~~first information further comprise instructions for carrying out the step of,~~

when executed by one or more processors, further cause the one or more

processors to carry out the step of:

detecting that the particular component or interaction between the particular

two or more components has entered the particular state or state

transition;

wherein said notification is generated in response to said step of detecting;

wherein the step of detecting comprises:

monitoring a condition associated with the particular component or

interaction between the two or more particular components;

querying a state table storing said first data to determine a state for the

particular component or interaction between the two or more particular

components;

determining, based on the second data and third data, that the determined state belongs to either the set of one or more undesirable states or state transitions or the set of one or more illegal states or state transitions.

58. (Canceled)

59. (New) The method of Claim 52, wherein the determined state transition is the particular state or state transition, and further wherein determining, based on the second data and third data, that the determined state belongs to either the set of one or more undesirable states or state transitions or the set of one or more illegal states or state transitions comprises:

based on the second data, determining whether or not the determined state belongs to the set of one or more undesirable states or state transitions.

60. (New) The method of Claim 52, wherein the determined state transition is the particular state or state transition, and further wherein determining, based on the second data and third data, that the determined state belongs to either the set of one or more undesirable states or state transitions or the set of one or more illegal states or state transitions comprises:

based on the third data, determining whether or not the determined state belongs to the set of one or more illegal states or state transitions.

61. (New) The method of Claim 52, wherein the state table further stores the second data and the third data.

62. (New) A method for capturing behavior for network components and for interactions between components comprising:

accessing first data that defines one or more states and state transitions for a particular component or interaction between a particular two or more components, wherein the first data defines at least one composite state transition, each of said composite state transition comprising multiple state transitions;

accessing second data that indicates, for the particular component or interaction between the particular two or more components, a set of one or more undesirable states or state transitions;

wherein each of said one or more undesirable states or state transitions is a

state or state transition of the one or more states and state transitions

that is associated with undesirable behavior;

accessing third data that indicates, for the particular component or interaction

between the particular two or more components, a set of one or more illegal

states or state transitions;

wherein each of said one or more illegal states or state transitions is a state or

state transition of the one or more states and state transitions that is

associated with illegal behavior;

wherein the set of one or more illegal states or state transitions is different

from the set of one or more undesirable states or state transitions; and

in response to the particular component or interaction between the particular two or

more components entering a particular state or state transition, generating a

notification corresponding to the particular state or state transition,

wherein the particular state or state transition is one of the one or more states

and state transitions;

wherein the particular state or state transition belongs to either the set of one

or more undesirable states or state transitions or the set of one or more

illegal states or state transitions;

the method further comprising:

detecting that the particular component or interaction between the particular

two or more components has entered the particular state or state

transition;

wherein said notification is generated in response to said step of detecting;

wherein the step of detecting comprises:

monitoring a condition associated with the particular component or

interaction between the two or more particular components;

querying a state table storing said first data to determine a state transition for

the particular component or interaction between the two or more

particular components; and

determining, based on the second data and third data, that the determined state
transition belongs to a particular set of one or more states or state
transitions, the particular set of one or more states or state transitions
being either the set of one or more undesirable states or state
transitions or the set of one or more illegal states or state transitions.

63.   (New) The method recited in claim 62, wherein the determined state transition is a
composite state transition, wherein the determined state transition is the particular state or
state transition.

64.   (New) The method of Claim 63, wherein:
the composite state transition comprises a first state transition and a second state
transition; and
neither the first state transition nor the second state transition is in the particular set of
one or more states or state transitions.

65.   (New) A computer-readable storage medium carrying one or more sequences of
instructions for capturing behavior for network components and for interactions between
components, which instructions, when executed by one or more processors, cause the one or
more processors to carry out the steps of:
accessing first data that defines one or more states and state transitions for a particular
component or interaction between a particular two or more components,
wherein the first data defines at least one composite state transition, each of
said composite state transition comprising multiple state transitions;
accessing second data that indicates, for the particular component or interaction
between the particular two or more components, a set of one or more
undesirable states or state transitions;
wherein each of said one or more undesirable states or state transitions is a
state or state transition of the one or more states and state transitions
that is associated with undesirable behavior;

accessing third data that indicates, for the particular component or interaction

between the particular two or more components, a set of one or more illegal

states or state transitions;

wherein each of said one or more illegal states or state transitions is a state or

state transition of the one or more states and state transitions that is

associated with illegal behavior;

wherein the set of one or more illegal states or state transitions is different

from the set of one or more undesirable states or state transitions; and

in response to the particular component or interaction between the particular two or

more components entering a particular state or state transition, generating a

notification corresponding to the particular state or state transition,

wherein the particular state or state transition is one of the one or more states

and state transitions;

wherein the particular state or state transition belongs to either the set of one

or more undesirable states or state transitions or the set of one or more

illegal states or state transitions;

wherein the one or more sequences of instructions, when executed by one or more

processors, further cause the one or more processors to carry out the step of:

detecting that the particular component or interaction between the particular

two or more components has entered the particular state or state

transition;

wherein said notification is generated in response to said step of detecting;

wherein the step of detecting comprises:

monitoring a condition associated with the particular component or

interaction between the two or more particular components;

querying a state table storing said first data to determine a state transition for

the particular component or interaction between the two or more

particular components; and

determining, based on the second data and third data, that the determined state

transition belongs to a particular set of one or more states or state

transitions, the particular set of one or more states or state transitions being either the set of one or more undesirable states or state transitions or the set of one or more illegal states or state transitions.

66.   (New) The method recited in claim 65, wherein the determined state transition is a composite state transition, wherein the determined state transition is the particular state or state transition.

67.   (New) The method of Claim 66, wherein:
  the composite state transition comprises a first state transition and a second state transition; and
  neither the first state transition nor the second state transition belong to the particular set of one or more states or state transitions.

68.   (New) The computer-readable storage medium as recited in Claim 57, wherein determining, based on the second data and third data, that the determined state belongs to either the set of one or more undesirable states or state transitions or the set of one or more illegal states or state transitions comprises:
  based on the second data, determining whether or not the determined state belongs to the set of one or more undesirable states or state transitions.

69.   (New) The computer-readable storage medium as recited in Claim 57, wherein determining, based on the second data and third data, that the determined state belongs to either the set of one or more undesirable states or state transitions or the set of one or more illegal states or state transitions comprises:
  based on the third data, determining whether or not the determined state belongs to the set of one or more illegal states or state transitions.

70.   (New) The computer-readable storage medium as recited in Claim 57, wherein the state table further stores the second data and the third data.